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ABSTRACT

This report contains the results of a study of the writing of college-trained personnel that examined: (1) the importance of their writing abilities in the world of work and in situations other than work, (2) the types of writing done on and off the job and the composing processes used, (3) the media college-trained people use for writing, and (4) the future writing needs of college-trained people. Following an introduction, the first section of the paper reviews existing surveys of the writing practices of college graduates. The second section reports the methodology and results of a survey of job related and unrelated writing of college-trained people, while the third section contains conclusions drawn about the writing of college graduates based on this survey and previous research and discusses the uses of writing in the near future. (HTH)

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WRITING AFTER COLLEGE: A STRATIFIED SURVEY OF THE WRITING OF COLLEGE-TRAINED PEOPLE

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One basis for evaluating any educational program is the degree to which the skills and knowledge it teaches are valuable to its graduates. In professional programs, for example, an awareness of what skills and knowledge are useful in a particular profession usually shapes the goals of programs designed to train people for that profession. Many professional programs have close contact with their graduates and those who employ their graduates. Accordingly, goals for these professional programs are often well defined. Writing programs, in contrast, rarely know if their graduates use the skills they were taught. Furthermore, writing programs often serve the great majority of students on campus. No other college program has such a broad mission. Writing programs are a direct consequence of the belief that all college graduates should be able to communicate effectively in writing. This belief is based in turn on two assumptions: a practical assumption that the ability to communicate in writing is an important skill for college graduates on the job and a humanistic assumption that the ability to communicate in writing is important to personal development.

Those who have cried out about the decline of literacy in America and those who have worked to improve college writing programs have taken the importance of writing as a given. Yet few people have tried to assess how useful writing is for college-trained people both on and off the job or what specific writing abilities college-trained people need to possess. Before any college writing program can be judged effective or ineffective, we must know first if what it teaches has value to

its graduates in later life. Like any educational program, the overall effectiveness of writing programs must be judged according to the needs of the population they serve. The need to write after college is surely on of the more important of these.

The present study examines the following questions: How important is the ability to write for college-trained people in the world of work? How important is the ability to write in situations other than work? What types of writing do college-trained people do on and off the job? What composing processes do college-trained people employ in writing? What media do college-trained people use for writing? What writing abilities will college-trained people need in the near future, say, 1990?

We attempted to answer these questions in four ways. First, we reviewed existing surveys of the writing of college graduates. Studies have been conducted that survey either writing in a single profession or the writing of graduates of a particular program. No survey, however, has attempted to generalize to college-trained people at large on the basis of either a stratified sample or a large, random sample. Second, we conducted our own survey of the writing of college-trained people stratified by employer and occupation according to the number of college-trained people in the work force. Third, we interviewed college-trained people about their writing on the job and off the job. Fourth, we assembled material on employment forecasts, changes in technology, and current trends that might give some indication of the writing needs of college-trained people in the

near future. From these efforts we draw some general conclusions about the importance of writing for college-trained people and the kinds of writing abilities needed by college-trained people both now and in the near future.

I. SURVEYS OF THE WRITING PRACTICES OF COLLEGE GRADUATES

Several surveys of writing on the job have been conducted. We will discuss the findings of these surveys on four related issues: writing practices on the job, the written products demanded in various professions, professionals' perceptions of writing problems, the importance of writing for advancement, and the goals which professionals would like to see college writing programs adopt.

A. Writing Practices in the World of Work

Research on writing practices on the job has focused on several related matters: 1) the percentage of work time spent writing, 2) the audiences for on-the-job writing, 3) the importance of writing skills to employers, and 4) the training in writing which employers offer to employees.

Percentage of work time spend writing. Several studies have confirmed that people in some occupations spend a great deal of time writing (Penrose, 1976; Rader & Wunsch, 1980; Stewart, 1976; Weinrauch & Swanda, 1975). However, it is not clear how these surveys define "time spent writing." Our experience indicates that most people think of time spent writing as the time spent in physically producing a written document. Such an operational definition of time spent writing is inadequate. Researchers who have studied composing have found that production is a relatively small part of total composing time. In a study of business letter writing, Gould (1980) found that on the average two-thirds of the total writing time was spent planning, 13% was spent

reviewing, and only 20% of the time was spent producing the letter. Thus, figures for the percentage of total work time spent writing should probably be interpreted as bare minimum figures.

A typical survey is that of Stine and Skarzenski (1979), who asked executives from 120 businesses with offices in Iowa how much time their employees spent writing. The executives estimated that their employees wrote for 28% of the working day on the average and communicated orally another 48% of their day. Rader and Wunsch (1980) conducted a similar survey of 93 business graduates of Arizona State University. Responding graduates claimed to spend on the average 37% of their work time speaking, 19% listening, 16% writing, and 13% reading--a total of 85% of work time devoted to communicating. The difference between the figures of Stine and Skarzenski and those of Rader and Wunsch can be partially explained by Rader and Wunsch's sampling of employees' views of their own writing behavior, rather than executives' views of their employees' writing behavior. Also, Rader and Wunsch focused specifically upon individual communication skills (speaking, listening, writing, and reading). Both studies confirm the general assumption that communication is the major activity in some sectors of the business world.

Rader and Wunsch classified their sample of business department graduates of a single university according to the job category of the respondents, using the following categories: accounting, banking/finance, clerical/secretarial, law/medical, marketing, office/general management, personnel, production/plant management, public relations, teaching, and miscellaneous.

Although their sample was not stratified or tied to research on which jobs business majors select, their survey does given some indication of the percentage of time business graduates of one institution spend writing in various occupations. Occupations with relatively high percentages of time spent writing were teaching (30%, N=2), accounting (25%, N=19), and public relations (18%, N=3). At the low end were personnel (5%, N=2), office and general management (9%, N=16), and marketing (12%, N=23).

Andrews and Koester (1979) reported a lower percentage of work time that accountants spend writing than did Rader and Wunsch. Andrews and Koester surveyed 478 professional accountants and accounting professors concerning the communication skills required in the accounting profession. They found that accountants spend on the average 18% of total work time writing. In another survey that included 80 loan officers in Philadelphia commercial banks, Van Dyck (1980) found that the banking executives spend 15% to 20% of scheduled work time writing.

While most studies of writing on the job have concentrated on business administration graduates, two major studies of writing in technical occupations have been conducted. Davis (1977) asked 245 prominent engineers listed in Engineers of Distinction about the importance of writing. He found that these engineers spend on the average almost 25% of their time writing. Anderson (1980) surveyed 841 graduates of seven departments at Miami (Ohio) University that require technical writing. These departments included Chemistry, Engineering Technology, Home Economics,

Office Administration, Pulp and Paper Science, Systems Analysis, and Zoology. Anderson asked his respondents to check percentage ranges of the time that they spent writing on the job. Nearly all respondents claimed to write some of the time. Of the total sample, 69% wrote for more than 10% of their work time, 48% for more than 20% of work time, and 15% for more than 40% of work time. Anderson found no significant differences among the graduates of different departments in time spent writing on the job.

Audiences for on-the-job writing. Existing research has shown not only that professionals spend a great deal of time writing on the job, but that they also write for a variety of audiences. Stine and Skarzenski (1979) asked their respondents to classify the audiences for writing as "expert" and "nonexpert." The business executives who responded claimed that 41% of their employees' writing was aimed at expert audiences and 58% at nonexpert audiences.

Anderson (1980) asked his respondents to analyze the audiences for their writing along several dimensions. He asked respondents to characterize audiences according to their specific knowledge of the writer's field of expertise. Anderson found that, unlike students in college classes who write for experts in that field, the writers he sampled most often write for readers who know less or no more about a subject than the writer. Moreover, he found that 60% of his respondents at least sometimes write for all groups of readers: those who are unfamiliar with the writer's subject, those who know a less about the subject than the writer,

those who know about the same as the writer, and those who know more about the subject than the writer. Anderson also had respondents classify their readers according to their level in an organization relative to the writer. He found that respondents most often write for those at the same level or higher but that 70% of his sample at least sometimes write for those lower in the organization. Differences across graduates of different departments were slight, indicating that graduates of all the departments address a variety of readers.

Another indication that college graduates write for varied audiences in their work comes from a survey of in-house training programs for manufacturing managers. In a random sampling of manufacturing firms in Illinois, Meister and Reinsch (1978) found that of those firms who had training programs (88 of 261 responding companies), three of four programs stressed communication with several types of audiences.

Although little survey data exists that considers the readers for on-the-job writing, all of it indicates that professional employees write regularly for audiences within and outside of their firms or agencies and for audiences whose knowledge of the subject is varied.

The importance of writing. The importance of writing in the world of work can be inferred from the amount of time employees spend writing and reading, but several studies have addressed this issue directly. Baird (1978) focused on how written communication influences the atmosphere of the workplace. He

concluded that the style and content of written communicaton affect employee morale. Stine and Skarzenski (1979) asked the business executives in their sample how important writing ability was in job advancement decisions for white collar workers. On a 1 to 10 scale with 1 being "of little importance," respondents ranked writing ability 3.2. Other surveys report considerably different results. Rader and Wunsch (1980) asked business graduates how important both written and oral communication were in their jobs. The ability to communicate in writing was ranked "very important" by 62% of the respondents, and the ability to communicate orally was ranked "very important" by 90% of the respondents. Van Dyck (1980) found writing to be a primary factor in promotion decisions in commercial banks. A research project presented in writing often determines whether an employee will be promoted early.

Anderson (1980) obtained similar results in his survey of graduates of technical programs. In answer to the question, "How important would the ability to write well be to someone who wanted to perform your present job?" 93% said it would be at least of "some importance"; 67% at least of "great importance"; and 16% of "critical importance." Among the seven fields surveyed, graduates of Pulp and Paper Science, Chemistry, and Engineering Technology ranked writing as most important to job performance, but even graduates of Zoology--the group who ranked writing as less important than those in other majors--still found writing important (84% ranked writing as at least of "some importance").

In-house training programs in communication. The importance of communications skills in business is further underscored by the widespread use of in-house training programs in communication. Meister and Reinsch (1978) found that among the Illinois manufacturing firms in their sample that had training programs, 92% of those programs included communications skills. In a sample of training programs in the greater Pittsburgh area, Wasylik, Sussman, and Leri (1976) found that 95% offered training in at least one communication skill. Stine and Skarzenski (1979) reported that 27% of the business executives they sampled worked for companies which had in-house training programs in writing and 23% worked for companies that brought in writing consultants. Taken together, the surveys indicate that American businesses are investing time and money to develop their employees' writing skills. Undoubtedly, this concern is in part a response to perceived weaknesses in communication skills, including writing, but it is also a recognition of the importance of speaking and writing abilities in the world of work.

B. On-the-Job Written Products

Most surveys of writing on-the-job have examined types of writing. Stine and Skarzenski (1979), for example, had respondents in their sample of 120 Iowa businesses rank twenty different types of written products according to their frequency. Respondents gave a 1 to the type they most frequently write and 20 to the type they write with least frequency. Stine and Skarzenski coded a lack of response as "21." Memos and letters were by far the most frequent types of written products. The

results are presented in Table 1 below:

TABLE 1

Stine and Skarzenski's Ranking of the Types of Written Products Common in Business

	TYPE	AVERAGE RANKING
1.	Memos	2.65
2.	Letters	2.7
3.	Short Reports	10.7
4.	Instructions and procedures	11.9
5.	Proposals	12.1
6.	Progress reports	12.5
7.	Evaluations	12.9
8.	Technical reports	13.6
9.	Long reports	15.3
10.	Job descriptions	16.5
11.	Promotional literature	17.3
12.	Speeches	17.4
13.	Policy statements	17.5
14.	Outlines	18.0
15.	In-house publications	18.6
16.	Professional journal articles	18.6
17.	Press releases	18.8
18.	Summaries and abstracts	19.3
19.	Environmental impact statements	20.4
20.	Other	21.0

Rader and Wunsch (1980) reached much the same conclusions about types of writing as had Stine and Skarzenski, observing that the most common written forms are memos and letters followed by reports. Anderson (1980) also found that graduates of technical programs most frequently write memos and letters. Because Anderson used a different classification scheme, his other types cannot be compared to those identified in the business writing surveys. After memos and letters, Anderson's respondents wrote, in descending frequency, step-by-step instructions, general instructions, preprinted forms, proposals for funding or approval of projects, formal reports, minutes, speeches, advertising, and articles for professional journals.

Surveys of businesses and technical fields indicate that writers on the job write many different types of written products. The types of writing tasks become even more diverse when we consider the different audiences that writers have to address. These surveys suggest that writing on the job is varied and complex.

C. Professional Observation of Writing Problems

Several surveys have asked professionals for their views of writing problems on the job. These surveys have tended to emphasize grammar and usage. Stine and Skarzenski, for example, asked their respondents to rank the frequency with which they encountered 12 common grammatical problems. The respondents ranked run-on sentences and fragments as the most frequent.

Whether the executives really are sensitive to these errors, however, is questionable. Kline and Memering (1977) have shown that fragments are common in published prose, and Williams (1981) has demonstrated that college writing teachers are unaware of common grammatical errors in otherwise well written prose. Stine and Skarzenski also asked respondents to rank common writing problems. The executives saw "wordiness" as the most frequent problem, followed by a number of grammar and usage problems. But when Stine and Skarzenski specified types of writing, such as job application letters, the weight given to grammar and usage errors was much lower. Other surveys have asked respondents to characterize fellow employees' writing. It comes as no surprise that respondents judge their coworkers deficient in writing (Andrews & Koester, 1979; Meister & Reinsch, 1978).

D. The Importance of Writing for Advancement

Studies of writing on the job have found that respondents do more writing as their responsibilities increase. The majority of the prominent engineers in the Davis (1977) study said that the wrote more as they advanced professionally. When these same engineers were asked how writing affects promotion decisions, 63 said the ability to write was usually critical, 153 said writing was usually important, 25 said writing was helpful, and 1 said that writing was usually not important. One respondent in the Stine and Skarzenski study (1979; p. 30) explained why the longer a person works the more important writing may become:

> Most applicants have trained for a specific entry-level job and seem to feel they will be doing it

> for a lifetime. Actually, their needs will be technical in the beginning, will become increasingly communicative over 2 to 10 years, and may become less technical over the balance of their careers. Instead, their jobs will become increasingly supervisory, managerial and administrative--while the importance and need to communicate continues to increase. In key jobs it becomes critical. Abilities to communicate and to work with other people are frequently the deciding factors in selecting between candidates for promotion.

Another observer (Wilson, 1979) attributes the imbalance between the large number of engineers in middle management and the relatively small number in top management directly to writing ability:

> It is not a lack of knowledge about business, finance, or any other aspect of corporate life that is keeping engineers from top posts but the inability of engineers to effectively communicate their understanding of broader corporate issues to those non-technical executives who currently hold the reins of corporate authority.

We will discuss further in Part III how the ability to write may not become critical until an employee advances in the hierarchy of a company or agency.

E. Goals that Professionals Recommend for College Writing Programs

Surveys have asked college graduates what should be taught in college writing programs based on their experiences on the job. The perspective of those on the job is often valuable to educators. Stine and Skarzenski (1979) asked business executives what college writing courses should teach. Respondents cited "clarity and simplicity" and "brevity or conciseness" most frequently--in fact, more than twice as often as they cited grammar. Stine and Skarzenski also asked the same question of

college professors at Iowa State University. Although there was less agreement among the professors, clarity and simplicity were still the most frequently cited qualities. Davis (1977) asked prominent engineers what they thought should be the main emphasis of college courses in technical writing. The engineers, too, cited "clarity" more often than any other quality. "Clarity" was followed by "brevity," "logical order," and "writing for the reader."

E. Limitations of Existing Surveys

The surveys discussed above indicate that college graduates write a great deal on the job and that they write varied types of texts for different audiences. The problem in generalizing from these surveys is that each has a very narrow focus. They have considered either the graduates of specific departments of one university, or they have surveyed one type of business in one geographical region. Even regional surveys, such as the Stine and Skarzenski survey, are further limited by the selection of companies out of a national directory such as Standard and Poor's Register. Small companies are not included in such directories; thus the sample is biased toward large companies. Another limitation is that their sample may not reflect all types of college-trained employees working at a particular firm. The nature of all communication, including writing, differs among large and small companies and among occupations. The limitations of these surveys led us to attempt a stratified sampling of all the major types of employers and occupations that college graduates enter.

II. A SURVEY OF ON-THE-JOB AND OFF-THE-JOB WRITING OF COLLEGE-TRAINED PEOPLE

A. Selecting a Representative Sample of College-Trained People

We set out to construct a broad picture of the writing of college-trained people in general, both on and off the job. We decided to survey a stratified sample of college-trained people in the work force. For this purpose, we used statistics from the United States Departments of Labor (Brown, 1979) and Commerce (Bureau of Census, 1980) on the number of college-trained people in the various sectors of the work force as the basis for selecting our sample. We used figures for 1978--the most recent set of complete data at the time we selected our sample. The statistics for the number of people working in the various sectors are relatively stable over a short term. They do not fluctuate nearly as much as the number of people entering particular kinds of jobs.

The Department of Labor classifies college-trained people in the work force in two ways--by types of occupations and by types of employers. Occupations can be divided into eight major categories: 1) professional and technical occupations, 2) managers and administrators, 3) sales workers, 4) clerical workers, 5) craft and kindred workers, 6) other blue-collar workers, 7) service workers, and 8) farm workers. Employers are grouped into nine major categories: 1) agriculture, 2) mining, 3) construction, 4) manufacturing, 5) transportation and public utilities, 6) wholesale and retail trade, 7) finance, insurance, and real estate, 8) services (hotels, personal services, medical

and other health services, and educational services), and 3) government. The percentage of college-trained people in the work force in 1978 by type of occupation and type of employer is given in Table 2.

Our efforts to make our sample representative ruled out a sampling by mail. We felt it necessary to visit each agency so that we could gather information from employees at more than one level. Furthermore, we wanted to collect interviews that would give us another perspective from which to view the writing of college-trained people. Thus we did not achieve a geographical distribution. All data were collected in the metropolitan areas of Austin, Houston, and Dallas, Texas, and Shreveport, Louisiana. We do not see this limitation as a crucial one since many of the firms we surveyed have offices in other regions of the country and many of the employees we talked with were not natives of the regions in which they now work.

If there is a bias in the sample, it may be that people who were more interested in writing were more inclined to talk with us. We tried to avoid this bias as much as possible by identifying individuals who would represent certain sectors of the work force before we approached them. Some people insisted that we needed to talk to someone else who wrote more that they did, but we explained that we were trying to make generalizations for the college-trained population at large which usually satisfied their objections.

We were able to achieve an acceptable fit of our sample with

TABLE 2

United States Department of Labor
Stratification of College Graduates in the Work Force (1978)

	Professional & Technical	Managers & Administrators	Sales	Clerical Workers	Craft & Kindred Workers	Other Blue-Collar	Service Workers	Farm Workers	TOTALS by business
Agriculture	.26	.066	.008	.025	.026	.051	.001	1.2	1.637
Mining	.47	.216	.009	.030	.074	.049	.001	---	.849
Construction	.63	1.630	.037	.110	.960	.199	.003	---	3.569
Manufacturing	8.00	3.730	.765	.670	1.370	1.090	.071	---	15.666
Transportation & public utilities	1.77	1.500	.094	.387	.434	.477	.027	---	4.689
Wholesale & retail trade	1.32	8.480	5.860	.900	.440	.542	.576	---	18.118
Finance, real estate, insurance	1.09	2.520	1.870	.730	.028	.016	.035	---	6.305
Services*	35.27	4.790	.240	1.380	.273	.226	1.210	---	43.389
Government	3.28	1.570	.009	.470	.015	.047	.174	---	5.565
TOTALS by profession	52.09	24.502	8.892	4.702	3.620	2.697	2.098	1.2	100%

*(hotels, personal services, medical and other health services, and educational services)

government labor statistics. As Tables 3 and 4 show, the largest cell variation is 1.7%, the largest row variation (type of employer) is 1.7%, and the largest column variation (type of occupation) is 2.5%. A comparison of percentages of types of occupations represented in the present study with government labor statistics appears in Table 3. Table 4 provides the comparison for employers.

TABLE 3

A Percentage Comparison of Occupational Types Represented in the Present Survey with U.S. Goverment Statistics for College-Trained People

TYPE OF OCCUPATION	PRESENT SURVEY	GOVERNMENT STATISTICS
1. Professional and technical occupations	54.5	52.1
2. Managers and administrators	27.0	24.5
3. Sales workers	8.5	8.9
4. Clerical workers	6.0	4.7
5. Craft and kindred workers	1.5	3.9
6. Other blue-collar workers	1.5	2.7
7. Service workers	1.0	2.1
8. Farm workers	0	1.2

TABLE 4

A Percentage Comparison of Types of Employers Represented in the Present Survey with U.S. Government Statistics for College-Trained People

TYPE OF EMPLOYER	PRESENT STUDY	GOVERNMENT STATISTICS
1. Agriculture	0.5	1.6
2. Mining	1.0	0.9
3. Construction	4.0	3.6
4. Manufacturing	14.5	15.7
5. Transportation and public utilities	5.0	4.7
6. Wholesale and retail trade	16.5	18.1
7. Finance, insurance, and real estate	8.0	6.3
8. Services	44.0	43.4
9. Government	6.5	5.6

Of the 200 people sampled, 28.9% worked for companies or agencies that employ less than 100 people and 17% worked for companies or agencies that employ 10,000 or more people nationally. The average number of years the persons we surveyed had worked in their present occupation was 4.2 years. All attended a college or trade school; 161 held at least a B.A., B.S., or other 4-year degree; and 71 had completed graduate work.

B. Percentage of Work Time Spent Writing

What percentage of your work week is spent writing? For all respondents who answered this question (N=197), the mean or average was 23.1% of total work time spent writing, or over one day in a five day week. The median was 17%. The same caveat made at the beginning of Part I applies here. Many respondents probably think of time spent writing as production time only, excluding the time spent planning and reviewing. Thus our figures for work time spent writing are likely to be only minimum figures.

Nearly three-fourths of the people sampled claimed to write 10% of working time or more while on the job. Only four people out of the 200 we sampled claimed not to write at all on the job. A breakdown by percentage of time spend writing on the job is given in Table 5.

TABLE 5

Percentage of Work Time Spent Writing

TIME SPENT WRITING ON THE JOB	PERCENTAGE OF RESPONDENTS
1. 0-9%	26.0%
2. 10-19%	23.5%
3. 20-29%	18.5%
4. 30-39%	7.5%
5. 40-49%	8.0%
6. 50-59%	8.5%
7. 60-99%	6.5%
8. Missing	1.5%

C. Types of Writing on the Job

How many of the following types of letters and memos do you write in a week? How important is each type to the evaluation of your overall job performance? Respondents were also asked to divide types of letters and memos according to whether they were sent to persons inside or outside their company, institution, or agency. Five persons claimed to write over 100 letters a week. These people send out many form letters. Inclusion of these individuals, however, inflates the mean or average number of letters per week for the entire sample. For this reason, we have used median figures rather than means in the tables below. The

median is the numerical value of the case in the exact middle of the data set. The median is less influenced by extreme cases than is the mean.

The 200 people we surveyed wrote 2.9 letters and memos per week to persons inside their company, institution, or agency (mean=6.6) and 5.2 letters to persons outside (mean=13.1) in a given week. Only 17 individuals (8.5%) do not write letters or memos on the job.

The most frequent types of letters written both inside and outside the writer's place of work were letters of response to request and letters of inquiry. Letters going outside the writer's workplace tended to be rated more important in terms of the writer's overall work performance. Over half of those surveyed (57.5%) rated letters in response to requests going outside the writer's place of work as at least "somewhat important," with 23.5% ranking these letters as "very important." Also highly ranked in importance were letters of inquiry, thank-you letters, and letters designed to sell products or services to persons outside the writer's workplace. Respondents wrote a great many different types of letters and memos. Some of this diversity is represented in the relatively large category of "other" letters and memos. Grouped in the "other" category were a number of different types of interoffice memos (including memos requesting subordinates to revise their written work), letters ranging from letters of transmittal to letters advising clients, and a variety of other short types such as notes on patients' charts (by a physician), company policy statements, disciplinary

actions, and various kinds of forms. Median numbers per week and rankings of importance for letters inside the writer's place of work appear in Table 6. Letters going outside the writer's place of work are summarized in Table 7.

TABLE 6

Median Number per Week and Ranking in Importance of Letters and Memos Written to Persons Within the Writer's Company, Institution, or Agency

TYPE OF LETTER	MEDIAN NUMBER PER WEEK (N=200)	NUMBER OF RESPONDENTS WHO WRITE TYPE:	WHO RANKED TYPE AS: SOMEWHAT IMPT.	IMPT.	VERY IMPT.
1. Letters of response to requests	.41	89	28	28	23
2. Letters of inquiry	.31	74	23	25	16
3. Thank-you letters	.09	30	9	11	9
4. Order letters	.07	24	8	7	6
5. Claim and adjustment letters	.06	23	6	4	8
6. Letters designed to sell products or services	.05	20	2	6	8
7. Collection letters	.02	10	1	1	4
8. Other letters and memos	.23	73	10	13	37

TABLE 7

Median Number per Week and Ranking in Importance of Letters and Memos Written to Persons outside the Writer's Company, Institution, or Agency

TYPE OF LETTER	MEDIAN NUMBER PER WEEK (N=200)	NUMBER OF RESPONDENTS WHO WRITE TYPE:	WHO RANKED TYPE AS: SOMEWHAT IMPT.	IMPT.	VERY IMPT.
1. Letters of response to requests	.99	115	17	38	47
2. Letters of inquiry	.55	99	32	24	29
3. Thank-you letters	.35	77	20	20	23
4. Letters designed to sell products or services	.23	65	3	10	43
5. Order letters	.15	44	14	9	8
7. Collection letters	.08	29	5	7	14
6. Claim and adjustment letters	.11	37	6	8	15
7. Collection letters	.08	29	5	7	14
8. Other letters and memos	.12	47	7	6	25

How many of the following types of reports do you write in a week? How important is each type to the evaluation of your overall job performance? Respondents also classified reports by audience. Unlike letters, reports are more commonly written for persons inside the writer's organization. The 200 people we surveyed wrote 2.4 (median) reports a week to persons inside their company or agency (mean=4.6), and 0.4 reports a week to

persons outside (mean=2.4).

The most frequent and most important reports were instructions and procedures reports and status reports written for persons inside the writer's place of work. Among all respondents, 44.5% wrote instructions and procedures reports for coworkers, 36.5% wrote status reports for coworkers, and 25% wrote management and employee relations reports. The most frequent outside types were status reports, followed by reports of original research and instructions and procedures. Some of the types of reports grouped in the "other" category are analyses of legislation and codes, management briefings, speeches, technical bulletins, research proposals, equipment justifications, and rate request reports. Data for reports to persons inside the writer's work place are summarized in Table 8 and data for reports to persons outside are summarized in Table 9.

TABLE 8

Median Number per Week and Ranking in Importance of Reports Written to Persons Within the Writer's Company, Institution, or Agency

TYPE OF REPORT	MEDIAN NUMBER PER WEEK (N=200)	NUMBER OF RESPONDENTS WHO WRITE TYPE:	WHO RANKED TYPE AS: SOMEWHAT IMPT.	IMPT.	VERY IMPT.
1. Instructions and procedures	.40	89	18	35	26
2. Status reports	.30	73	16	21	29
3. Personnel management and employee relations reports	.18	50	15	11	15
4. Reports of original research	.13	40	6	10	20
5. Minutes and reports of meetings	.12	37	10	15	6
6. Budget reports and grant proposals	.12	37	3	8	22
7. Business forecasts	.08	37	5	4	12
8. Marketing forecasts	.08	26	6	7	7
9. Descriptions of mechanisms	.06	21	6	10	2
10. Press releases	.03	11	2	3	5
11. Bibliographies	.03	12	1	6	4
12. Other reports	.03	12	1	1	6

TABLE 9

Median Number per Week and Ranking in Importance of Reports Written to Persons Outside the Writer's Company, Institution, or Agency

TYPE OF REPORT	MEDIAN NUMBER PER WEEK (N=200)	NUMBER OF RESPONDENTS WHO WRITE TYPE:	WHO RANKED TYPE AS: SOMEWHAT IMPT.	IMPT.	VERY IMPT.
1. Status reports	.13	39	10	13	16
2. Reports of original research	.11	36	4	10	22
3. Instructions and procedures	.11	33	8	8	15
4. Budget reports and grant proposals	.08	27	2	8	15
5. Descriptions of mechanisms	.05	16	3	3	8
6. Minutes and reports of meetings	.04	13	4	5	1
7. Press releases	.03	11	1	4	6
8. Marketing forecasts	.03	11	0	2	7
9. Bibliographies	.03	10	1	4	3
10. Personnel management and employee relations reports	.02	7	3	2	1
11. Business forecasts	.02	8	2	1	4
12. Other reports	.04	16	1	1	6

Individual respondents wrote in a great multiplicity of types. For a given week, the median number of different types that the 200 respondents wrote was 7.2 (mean=8.5), a figure that testifies

to the diversity of writing on the job.

D. Methods of Composing and Media Used by Writers on the Job

What percentage of what you write on the job is written in collaboration with one or more persons? One of the biggest differences between writing in the classroom and writing on the the job is in the nature of authorship. School writing assignments are almost exclusively designed to be written by one person (though, of course, this is not always the case), while on-the-job writing tasks are frequently written by more than one person. The median percentage of writing done with more another person or persons is 10% (mean=25%). Only 26.5% of the 200 people we surveyed never collaborate in writing.

Do you compose on a computer or use a computer for word processing? Just over a quarter of our sample (25.5%) used computers for communicating in writing. Of the 51 persons who used computers for writing, 47 did so frequently.

Do you dictate letters or reports as part of your job? Over a quarter of those surveyed (26%) regularly dictate letters or reports. Among users of dictation, the median number of documents per week composed by dictation was 3.7.

Do you make notes for oral presentations or make visual aids or handouts for oral presentations? The majority (56.5%) of persons we surveyed make oral presentations. Typically, presentations are not read from a prepared text or from notes. Instead, graphics presented with overhead transparencies or slides and

handouts are used both as an organizational aid for the audience and a mnemonic aid for the speaker. Oral presentations are frequent activities for those who give them (median=12.1 a year).

Do you write for presentations on videotape? For what purpose? Some companies and agencies are extending the audiences of oral presentations by videotaping them. About 10% of the people we sampled use videotape regularly. The purpose is predominantly for instruction, but some use for sales and for in-house reports also was observed.

The next group of questions concern what problems in writing college-trained people find on the job and what they think college writing courses should teach.

E. Effects of Bad Writing

Based on the writing that crosses your desk, do you think that bad writing is: Not a problem? A real problem? or A serious problem? If bad writing is a problem, what effects does it have on your company, institution, or agency? In answer to the first set of questions, 22% of those who responded (N=172) found bad writing not to be a problem in their place of work, 51% found bad writing a real problem, and 27% found bad writing a serious problem. We invited comments on the effects of bad writing from all respondents who found bad writing a problem (N=134). All 134 wrote discursive responses. We classified these responses along common criteria. Table 10 summarizes the responses on the effects of bad writing.

TABLE 10

Effects of Bad Writing According to Those Respondents Who Found Bad Writing a Problem

EFFECT	PERCENTAGE CITING EFFECT
1. Misunderstanding	58%
2. Loss of time	49%
3. Bad public image	40%
4. Lack of impact	23%
5. Loss of business	17%
6. Impedes professional advancement	10%
7. Other	6%

Misunderstanding, loss of time, and a poor public image were the chief effects enumerated. The effect on professional advancement, however, turned up more frequently in our interviews than Table 10 indicates, perhaps because the question stressed the effect on the place of work rather than the individual.

F. What Writers on the Job Think Should Be Taught in College Writing Courses

Based on your experiences on the job, what do you think should be taught in college writing classes? Respondents wrote discursive answers to this question (N=191). The responses were analyzed, and the results are presented in Table 11.

TABLE 11

What Respondents Think Should Be Taught
in College Writing Courses

RESPONSE	PERCENTAGE CITING ITEM
1. Clarity	43%
2. Grammar, mechanics, and usage	42%
3. Organization	33%
4. Business and technical writing	31%
5. Brevity	26%
6. Specific business and technical formats	24%
7. Idea development	22%
8. Making an impact on audience	15%
9. Vocabulary	11%
10. Adapting to audience or situation	10%
11. Problem solving	7%
12. Reading	4%
13. Other	8%

Clarity, correctness, and organization were most frequently mentioned. But just as in other surveys, our results are difficult to interpret. For example, clarity could mean an emphasis on a plain style or it could reflect concerns for organization or even concerns for the underlying conception of a piece of writing. We will return to this point in our conclusions. The importance of grammar, mechanics, and usage is perhaps inflated because we collapsed many kinds of responses

that mentioned standard usage. Had we sorted these responses into related, but divisible, categories rather than grouping all responses related to correctness, the relative importance of grammar, mechanics, and usage might have appeared to be less.

G. Writing Off the Job

What do you write off the job? How often? Respondents did not claim to do much writing off the job. They wrote less than one personal letter a week. Other types of writing off the job were even more infrequent. Ten people (5%) wrote for or edited some type of publication off the job (for example, a regional Audobon Society newsletter), and 24 people kept diaries or journals, but only two of those people wrote daily entries.

H. Results by Type of Occupation

Table 12 lists the percentage of total work time spent writing by type of occupation. Three types of occupations--craft and kindred workers, other blue-collar workers, and service workers--employ relatively few college-trained people, and they have been combined into one category for purposes of analysis.

TABLE 12

Mean and Median Percentage of Work Time Spent Writing by Type of Occupation

TYPE OF OCCUPATION	N	MEAN	MEDIAN
1. Professional and technical	109	29%	25%
2. Managers and administrators	54	18%	13%
3. Sales workers	17	18%	10%
4. Clerical workers	12	12%	9%
5. Blue-collar and service workers	8	4%	1%

Professional and technical occupations employ over half the college-trained people in the United States, and it is in those occupations that writing is most important. No person in a technical or professional occupation in the present survey claimed not to write. Only 17% wrote less than 10% of their work time and only 34% wrote less than 20% of their work time. In other words, two-thirds of our sample of people in technical and professional occupations write at least one full working day out of every five.

Tables 13 and 14 show the numbers of letters and memos and reports written per week by type of occupation. Managers and administrators wrote more letters and memos than any other occupational group, closely followed by sales workers and clerical workers (in the median column). Note the large

difference in Table 13 between the mean and median for professional and technical occupations, which indicates that a few writers account for most of the mean number of letters and memos per week. Just one manager among the 54 we surveyed did not write letters or memos. Blue-collar and service workers were the only group in which fewer than 80% wrote letters.

Managers and administrators also wrote more reports than other occupational group, but they were just ahead of the median for professional and technical occupations. At least two-thirds of the respondents in each group wrote reports except for blue-collar and service workers.

TABLE 13

Mean and Median Numbers of Letter and Memos Written per Week by Type of Occupation

TYPE OF OCCUPATION	N	MEAN	MEDIAN
1. Professional and technical	109	19.0	7.7
2. Managers and administrators	54	23.3	14.8
3. Sales workers	17	21.6	13.7
4. Clerical workers	12	17.3	13.5
5. Blue-collar and service workers	8	3.6	0.5

TABLE 14

Mean and Median Numbers of Reports
Written per Week by Type of Occupation

TYPE OF OCCUPATION	N	MEAN	MEDIAN
1. Professional and technical	109	7.8	4.3
2. Managers and administrators	54	6.1	4.8
3. Sales workers	17	5.1	2.0
4. Clerical workers	12	10.0	2.5
5. Blue-collar and service workers	8	2.4	0.6

There were other indications of the importance of communication skills in professional and technical occupations. College-trained people in technical and professional occupations more frequently wrote collaboratively than did individuals in other occupational groups. They share authorship on a third of the written products they produce. The majority of people in this category (74.5%) also made oral presentations using notes or visual aids. Technical and professional people were also the most common users of computers for writing (42%).

Managers and administrators tended to dictate written documents more than other groups. About 2 out of every 5 managers or administrators use dictation. The majority of managers and administrators (67%) and sales workers (69%) give oral presentations using notes or visual aids.

I. Results by Type of Employer

Results for the percentage of total work time spent writing by type of employer are given in Table 15. Four types of employers which employee relatively few college graduates were combined for purposes of analysis: transportation and public utilities (N=10), construction (N=8), mining (N=2), and agriculture (N=1).

TABLE 15

Mean and Median Percentages for Work Time Spent Writing by Type of Employer

TYPE OF EMPLOYER	N	MEAN	MEDIAN
1. Services	88	29%	25%
2. Wholesale and retail trade	33	13%	10%
3. Manufacturing	29	21%	10%
4. Finance, insurance, and real estate	16	22%	15%
5. Government	13	29%	20%
6. All other	21	16%	10%

Tables 16 and 17 give the mean and median numbers of letters and memos and reports by type of employer. Individuals in government were the most prolific letter and memo writers followed by those in manufacturing and in finance, insurance, and real estate. The latter two groups were also the most frequent report writers followed by people in services. The relatively high ratio of time per document produced among individuals in service occupations may be due to long reports. Of the 90

individuals who wrote reports for audiences outside their place of work, 50 were in service occupations. In only one other employer group--finance, insurance, and real estate--did as many as 50% of the individuals we sampled write reports for outside audiences. One person who worked for a service employer said our survey should have asked for the number of weeks spent writing a report instead of the number of reports written in a week.

TABLE 16

Mean and Median Numbers of Letters and Memos Written per Week by Type of Employer

TYPE OF EMPLOYER	N	MEAN	MEDIAN
1. Services	88	16.5	8.3
2. Wholesale and retail trade	33	19.8	10.6
3. Manufacturing	29	18.2	16.0
4. Finance, insurance, and real estate	16	27.8	13.0
5. Government	13	32.1	19.7
6. All other	21	21.1	9.0

TABLE 17

Mean and Median Numbers of Reports Written per Week by Type of Employer

TYPE OF EMPLOYER	N	MEAN	MEDIAN
1. Services	88	7.5	4.5
2. Wholesale and retail trade	33	4.5	2.2
3. Manufacturing	29	7.1	5.1
4. Finance, insurance, and real estate	16	13.7	6.5
5. Government	13	5.5	1.0
6. All other	21	5.0	2.1

Besides spending the most work time writing, college-trained people employed in services tend to write collaboratively more often (33%), more commonly gave oral presentations (80%), and more commonly used computers for writing (42%) than did persons working for other types of employers. Also recording high percentages of coauthored documents were government (31%) and finance, insurance, and real estate (29%). The majority of people in wholesale and retail trade (61%) and in manufacturing (56%) make oral presentations, and persons in finance, insurance, and real estate (40%) also were high in use of computers for writing.

III. CONCLUSIONS ON THE WRITING OF COLLEGE-TRAINED PEOPLE BASED ON OUR SURVEY AND OTHER RESEARCH

From what we learned from our survey, from the interviews that we conducted, and from what we have read, we can draw some general conclusions about the writing of college-trained people now and in the near future.

A. Writing On the Job

We came to three general conclusions about the writing of college-trained people on the job: 1) many people who write on the job have a sophisticated sense of the demands of writing for different audiences and purposes; 2) writing is an important and frequently used ability across all the major types of occupations and employers that college-trained people enter; and 3) college-trained people write diverse types of written products in a variety of media using a variety of composing processes.

1. Many college-trained people have a sophisticated knowledge of the rhetorical demands in writing. College-trained people who write frequently have a developed awareness of the specific differences in writing for varied audiences and purposes. Rhetorical theory from Aristotle to the present is founded on the relationship among writer, audience, and subject matter. The written text can be defined as a composite of these three aspects (see Kinneavy, 1971). Although most college-trained people do not have an explicit awareness of rhetorical theory, they often talk about writing in terms of subject matter, audience, and the image of themselves which they wish to project through their

writing. For example, a meteorologist who now works primarily as a hydrology consultant at an engineering firm talked about the writing that he and his associates do:

> We write about a wide range of subject matters. Some things are familiar to a lay audience. Most people can understand a study about floods. They can understand a study that defines a 100-year flood plain. They can imagine, say, water covering a street familiar to them. But other subjects are very difficult to communicate. We work with three-dimensional models of water currents, for example, that are based on very recondite hydrolic movements. We also have a wide audience range. Some of our reports are read by citizen groups. Sometimes we write for a client who has a technical problem of some sort and is only interested in what to do about it. And sometimes we write for audiences with high technical expertise like the Army Corps of Engineers. Audiences like the Army Corps expect a report to be written in a scientific journal style, and they may even want the data so they can re-analyze it. A lot of times the audience is mixed. A regulatory agency may know little about the subject of one of our reports, but they may have a technically trained person on their staff who does. In any case, we must understand what it is that the client wants, and we must be aware of what he knows about the subject. We must convince clients that we know what we're doing. We depend on return business and word-of-mouth reputation, and we must make a good impression the first time. Much of the professional reputation of this company rides on how we present ourselves in our technical reports.

Other respondents discussed matters of style and tone in terms of the relationship between writer and audience. A secretary told us: "Many times the only communication we have with an individual is by writing. Proper tone is most important."

Our survey, like previous surveys, found strong concern among college-trained people for clarity, brevity, and organization. The question that other surveys have not answered is what respondents mean by these qualities in writing. Are these terms merely "buzz-words?" Do these responses reflect the prejudices

of the researchers? Or do they reflect broader and deeper awareness about what makes effective writing? A simple mention of the importance of clarity, brevity, and organization on a survey instrument does not give a sense of what a respondent means by these terms.

When respondents were given a chance to discuss these terms, they frequently related clarity, brevity, and organization to rhetorical concerns. They more often defined clarity as clear thinking rather than simple writing. As one respondent put it, "good writing and clear thinking are inseparably tied." Another person told us that clarity in the written product reflected a clear approach in attacking the problem. A person in marketing explained her concept of clarity:

> Planning and organization are most important in meeting the needs of the intended reader, whether he is a client, a potential client, a regulator, or some other person. The written report or document must convey the intended message as clearly and accurately as possible in as short a form as possible. Clarity of expression permits the reader to devote most of his or her energy to the consideration of the message. The reader should not be forced to wonder what the writer intended to say.

Likewise, brevity was not held up as an end in itself, but as an aid to the reader in understanding the subject: "Too many people are overly wordy and unable to take a complicated subject and reduce it to the major points. Many a good idea has been killed with an overabundance of words."

We found a similar awareness of what writing involves when we focused on college writing courses in our interviews. Several respondents emphasized the need for writing throughout a

student's coursework. One respondent said, "The Math, Science, or Arts instructor has no right to lower the 'communication skills' aspect of any course he teaches." One engineer went so far as to say that business and technical writing is not a primary concern of English departments:

> Technical and business writing skills could probably be better developed during college in the context of technical course work (e.g., lab reports, class projects) rather than in English courses if the writing skills were given greater weight in these courses. [our italics]

Although respondents showed concern for the writing skills useful in the working world, many did not offer simplistic conceptions of what these skills are or how they should be taught. Our respondents gave us a diversity of opinions on what college writing instruction should include, a diversity that reflected many of the various positions writing teachers themselves have voiced on how writing should be taught. Some respondents thought that college writing courses should focus on "high-level" skills, such as analysis, organization, use of evidence, and so on. A manufacturer voiced the opinion that

> Students need to learn how to write summaries. People in business expect to read the important points first.

Respondents who focued on high-level skills saw the greatest problems in complex writing tasks, such as analytical reports.

Other respondents emphasized "low-level" skills:

> It must not be assumed every incoming freshman has a fundamental knowledge of English grammar and how it works.

Several people stressed that writing instruction was not only essential in most academic disciplines, but also at most stages in a student's education:

> College is too late to start teaching the language. Writing structure without adequate vocabulary or grammatical background is useless.

Concern for "grammar" and "mechanics" was widespread among respondents, but we did not find that our respondents equate "grammar" with the widely publicized "back to the basics" movement. Persons who mentioned qualities like "grammar," "proper syntax," and "mechanics" usually touched on other issues as well when they elaborated their concerns for the teaching of writing. One doctor who mentioned grammatical correctness also wanted students to have "exposure to well written material in a variety of fields, from E. B. White to Einstein." Others maintained that strict emphasis on correctness will not produce effective writing. As one person said,

> Codified rules will not teach proper writing skills. Reading good writing finally ingrains good practice. Good writing is part of everything we communicate officially and must be part of and required in every course from kindergraten through graduate school.

Perceptions such as these indicate that at least some college-trained people have a well-developed understanding of the complexity of writing and the complexity of teaching writing. The popular media and, indeed, college writing teachers themselves have repeated terms like "grammar" in describing the public's concern about writing. We found labels such as "grammar" and "usage" express only part of the concerns that

college-trained people have about writing. People who said the "basics" are important also stressed that college graduates need to know more than just the basics. They need to be able to write well in novel situations and to master a number of different styles. They especially must be able to communicate to a variety of audiences.

2. Writing is an important and frequently used skill across all major types of occupations and employers that college-trained people enter. We base our second conclusion on our numerical data as well as on our interviews. When respondents were asked what percentage of work time they spend writing, 193 of the 197 who answered this question said that they write on the job. Furthermore, 145 of the 197 write at least 10% of their total work time or for 4 hours in a 40-hour week; 98 of the 197 write 20% of total work time or 8 hours in a 40-hour week. People in professional and technical occupations--the types of occupations where over half of college-trained people are employed--on the average write nearly 30% of total work time.

The products of many companies, agencies, and institutions are written documents. The high percentage of employees who write regularly on the job is a result of both the growth in technology and in bureaucracy, and the importance of the written word is understood by those who work for such employers. An engineering consultant said:

> Our product ultimately is the written document. Poorly written reports can (and have) undermined the value of the technical work.

It is not surprising, therefore, that among the 134 people who found bad writing a problem, 58% noted that bad writing causes misunderstanding at the places where they work and 49% said that bad writing wastes employee's time. Bad writing creates waste in three primary ways: people take longer to read poorly written documents; people misunderstand poorly written documents; and people have to rewrite poorly written documents. Consequently, bad writing often forces more paperwork. Besides causing inefficiency within a company or agency, bad writing has adverse effects on relationships with the public. One respondent told us that "If valuable time is not taken to correct bad writing within the company, it can have serious effects on clients' opinions of our competency." Several respondents were concerned with the image that bad writing projects because "customers feel that bad writing reflects on our ability to get the job done." A tax examiner mentioned another effect of bad writing: "It causes misunderstanding between the taxpayer and this office. This leads many times to unnecessary litigation."

The quality of writing not only determines the image a company or agency projects to the public, but also the image an employer has of individual employees. An executive at a scientific consulting firm was blunt on this issue:

> People who can't write don't last very long around here. We can't afford them. We're a small company compared to our competitors. We work on a close profit margin. If a person writes poorly, then another person of similar technical competence has to be put on the same job, a person who can understand and translate what the first person has written. This means two people are doing the job of one. We don't enjoy that kind of luxury around here.

Writing ability is a screening device for many employers. A vice president of a nationwide corporation explained how new employees are recruited.

> We go after the top graduates in any given field we need. We pay well, so we usually get those we are after. In any particular field, we will go after the graduates of six or seven schools we know are good. We know those we recruit have the ability to solve technical problems. What we don't know is how well they can identify technical problems, how well they can manage, and how well they can communicate. We try to find those things out before we hire them. We ask for a short piece of writing, usually an answer to some technical problem that we are sure they know how to solve. And when we bring them here [for an on-site interview], we ask them to make an oral presentation on some technical area they know about. We aren't really interested in what they have to say, though the candidates usually aren't aware of this. We want to know how well they can communicate.

Likewise, persons we surveyed who knew about promotion decisions at their place of work regularly brought up writing ability. A director of customer services at a public utility told us:

> Good writing skills are the first and most important factor I evaluate when selecting middle managers. The inability to formulate an organized, concise, logical response to a written question has cost many applicants the opportunity to be considered for jobs for which they may otherwise be well prepared.

Writing ability sometimes is less important in an entry-level position but becomes increasingly more important as the individual advances in the hierarchy. An executive at a major record corporation explained how this situation arises in wholesale and retail businesses:

> Many companies, ours included, do not require written reports or follow up by their employees that are involved in the actual sales or promotion process. Everything is communicated orally, the purpose being to eliminate the

> paperwork load, thus allowing more time at the point of contact. The real problem I see is one that develops later in an individual's career, after he has been on the street for several years with no need of written communication. The individual is promoted to a management-level position and charged with the responsibility of written documentation without having recent training or experience in written communication. The ability of the individual to move readily into management is more often than not hampered by that individual's lack of written communication skills than by the understanding of the job itself.

This statement closely echoes the statement from the Stine and Skarzenski (1979) study quoted in Part I.

Some managers explained to us that in addition to the writing that they do they are often responsible for the writing of their subordinates. Hence they frequently serve as editors. A manager in an engineering firm said:

> I do little original writing; however, I do considerable reviewing and overview editing of reports prepared by other staff members.

Several managers had interesting things to say about how they develop their employees' writing skills. A bank manager said:

> Almost every new manager we hire has to be trained in writing. We have to teach analytical writing to entry-level employees. Almost no one in the bank can write a satisfactory report. One manager in particular cannot write a report in an appropriate style. He is extremely informal in how he writes. I have worked with him a lot, but he still has a long way to go.

Another respondent told us how he works continually to improve the writing of those under him:

> In order to help them [lower-level managers] to improve their skills, I have them prepare the first draft of many of my letters and reports. Any changes I make

> are reported back to them, and we discuss the reasons for the changes. I feel that this process is the best way for them to improve their skills, and it also helps me to recognize what progress they are making.

The final comment is one indication of how managers view writing skills in terms of job performance. As one chemist put it, "the boss may only see your memos and make many decisions concerning your career on that basis." Several individuals asked us to tell our students that "Writing is an important part of my job."

3. College-trained people write diverse types of writing products in a variety of media using a variety of composing processes. Part of the awareness that many of our respondents showed for rhetorical constraints originates in their experiences with writing of diverse types. Not only did we see a wide range of types represented across our sampling, but individuals themselves write several types of letters, memos, and reports. In fact, the types are so diverse that they challenge any definition of what we have been up to now calling "writing." We saw people using graphics and brief written handouts in what were otherwise impromptu oral presentations. We watched the service manager at an automobile dealership make his parts order by typing a set of symbols into a computer terminal. And we talked with a claims examiner for the Veteran's Administration who has 120 form letters in computer files which he can send by typing a name and a command into his terminal.

In interviews, some of which have been quoted above, respondents explained to us that their audiences are as diverse as the types of documents they write. Several persons employed

in professional and technical occupations emphasized the need for translating complex technical material into more accessible language for audiences with little technical knowledge. Some people addressed this issue as a matter of changing a professional vocabulary into laymen's language, but other people recognized that extensive restructuring and refocusing are often needed as well when presenting complex material to less sophisticated audiences.

Concern for different audiences was sometimes expressed in terms of style. Often the two were linked:

> I expect my managers to be able to write for several audiences, and to have the flexibility and knowledge to choose the most effective style.

A common pair of complaints we heard were that employees write too informally for those outside the company or agency and write too formally for those within, projecting stuffiness or indifference. Obfuscation was also frequently mentioned, whether as jargon, bureaucratese or, in the words of an Air Force officer, "pentagonese":

> There is a military argot--Pentagonese--which permeates all military writing. It is complicated by charged words, words that have particular shades of meaning to the initiated. It inhibits communication between the armed forces and those outside.

Several people talked about the different styles that different purposes require. Whether respondents touched on writing aimed at "selling an idea," ingratiating oneself to a legislator, or presenting the main points of an impact study, it was clear that

some people had a well-developed sense of the relationship of style and purpose.

Our findings on the diversity of types of written products and the diversity of the audiences who read these products reiterate the findings of some of the studies that we reviewed in Part I. We draw two implications from these findings for college writing programs. First, writing courses should not concentrate on one particular type of writing for one particular audience. Instead, they should teach skills that will apply for a variety of writing types and audiences. Even if a writing program could specify the exact types of written products that a graduate would produce in his or her first job, there is a strong likelihood that the graduate will have different writing needs as he or she advances or changes jobs. Second, writing courses should attempt to simulate real writing situations. The people we talked with who knew the most about writing learned by writing for specific audiences. Audiences other than the teacher are uncommon in school writing, and at least in our experience, many students don't even write for the teacher. Teachers need to devise situations where real writing could occur and find ways to indicate how a real audience might respond.

Few previous studies of real-world writing have looked at how the writing is composed. We found some important differences between how real-world writing is composed and how school writing is composed. People writing on the job often use a variety of composing strategies. For dictating memos and letters, they use what Gould (1980) has called a "first-time-final" strategy,

rarely revising what they have composed. Reports, on the other hand, often go through multiple drafts, especially those reports destined to go outside the company or agency.

Another major difference is multiple authorship. The great majority of people we surveyed (73.5%) sometimes collaborate with at least one other person in writing. The nature of the collaboration varies considerably. Sometimes a half dozen or more experts in various fields will contribute a section to a technical report, with the project leader integrating the sections into a coherent whole. In other cases, a superior will simply review the work of a subordinate, making small changes if necessary. And on still other occasions, people will work closely throughout all phases of a writing project, coming up with ideas and putting them on paper as a team. Coauthorship is especially common in professional and technical occupations. It places a different set of demands on a writer than does single authorship. Writers must be able to blend their styles with the styles of others so that the final document has a single, unified voice. The voice must be consistent not only throughout a particular document, but oftentimes throughout all written documents that an agency or company produces.

Ways of composing differ as well. A report might begin as an oral presentation within a company, then later be converted to a videotaped presentation or a written report. Many people dictate some written products, such as memos, and compose others in longhand. One manager told us that he encourages his employees to use dictation for written work because they become much more

adept in oral presentations. If his observation is accurate, perhaps habitual dictation teaches one to speak in a written style.

Many businesses and agencies now use computers for much of their correspondence. The transition to computers is affecting how people write:

> We have gone to a word processing department. This was done to save money on correspondence. But I have not been able to use word processing the way it was designed, designed to save money. I used to write letters out longhand, then go back and revise them and hand them to my secretary. Now we are supposed to give dictation directly to the word processing department. If I write letters out in longhand, then revise them, then read them over the phone, I have defeated the purpose of the system, to save money and to centralize correspondence. But so far I haven't been able to dictate letters directly.

The problem that this writer has with dictation might not be a problem if he could have access to a terminal in his office. At present, only a few people have access to terminals in companies with word processing centers. That situation may change in the future.

Computers are also changing how people revise. Since revisions are simple to make using computer text editors, people are encouraged to make them more often. For example, a manager would be hesitant to ask a secretary to retype a 60-page document to fix a few bad sentences, but he or she would not hesitate to make these adjustments if a retyped document could be obtained in seconds from a machine.

The implication we see for college writing programs is that

they should not concentrate on a single process of composing. College-trained people are likely to compose alone and with others, sometimes by dictating and sometimes by writing, sometimes by a single draft and at other times through multiple drafts. Again our findings suggest that college writing courses should take a broad view of what writing ability is, a view that incorporates writing among other communication skills.

B. Writing Off the Job

We found that people do not write much off the job. Nothing we have read or have observed disputes this finding. The telephone has largely replaced letters as a means of communicating with distant family and friends. Perhaps television and other forms of entertainment have had a similar effect upon writing as a hobby. Journals and diaries do not seem as prevalent as they once were, judging from the extensive 19th-century diary collections in some historical libraries. More research is needed into what and why people write off the job.

An often cited reason for the so-called decline in writing abilities is that people do not write much off the job. Children and young adults do not understand the uses of writing because they rarely see adults write. We still believe, nevertheless, that writing has important functions for college-trained people off the job. Occasions for making complaints and requests in writing arise frequently. Many people, including therapists, recommend keeping daily journals. One respondent, a retail sales manager, said that self examination in writing is valuable

because "writing down your personal thoughts gives you time to think about your feelings."

C. The Uses of Writing in the Near Future

The data that we and others have gathered indicate the importance of writing in the world of work. But those who administrate educational programs need to plan for the future. They need to know whether the interest in writing today reflects a short-term response to public clamor about a decline in literacy or whether the interest reflects a long-term trend toward careers where written communication is essential.

Most long-term economic studies do not isolate occupations that emphasize writing ability. They have focused on traditional kinds of economic products rather than the production and distribution of knowledge. Machlup (1962) did the first large-scale study of what might be called the "information sector" of our economy. Machlup classified five major groups of industries and institutions that produce, process, and distribute knowledge: (1) education, (2) research and development, (3) media of communication, (4) information machines, and (5) information services. He estimated that in 1958, 29% of the gross national product (136.5 billion dollars) and 31% of the total labor force was committed to the information sector as he defined it. Furthermore, Machlup found that the information sector had expanded very rapidly since 1947, more than doubling the growth rate of the GNP during that 10-year period. Machlup's estimates have attracted considerable attention in the business

world. His figures have been periodically updated. In 1968, for example, Marschak (1968) predicted that the information sector would involve 40% of the GNP by the late 1970's. Growth in industries such as telecommunications, television, data processing, and health services during the 1970's helped to bear out Marschak's predictions (Bell, 1980).

Porat (1976) used a different set of assumptions in measuring the information sector. He analyzed the National Income Accounts for 1967 according to the three kinds of estimations used to compute the gross national product. Porat found that over 43% of total corporate profits for 1967 originated in primary information industries. These same industries accounted for over a quarter of the total GNP in 1967. Bureau of Labor statistics offer still another perspective. In 1930, 12.5 million workers were employed in the information sector, 10.5 million in agriculture, 18 million in industry, and 10 million in services. In 1980, the Bureau of Labor projected 45 million in the information sector, 2 million in agriculture, 21.5 million in industry, and 27.5 million in services (Bell, 1980, p. 522). Even allowing for the possibility that some subsectors of the information sector, such as education, will not continue to grow at the same rapid rate, the number of workers in the information sector is still likely to increase. Such figures suggest that the national interest in written communication is not a passing fad and that writing ability will be important for a large percentage of the jobs that college-trained people enter in the near, and not so near, future.

Besides affecting employment trends, technology will have a great impact on the nature of writing in business, industry, and government. Indeed, the two trends are closely related. One expert, Strassman (1981), forecasts that there will be 55 million people in "information employment" jobs by 1990. Because the labor cost per capita will be high, perhaps as much as 65% to 70% of the total labor value added, there will be great pressure to increase the effectiveness of each employee's communications through electronics. In 1981 there are approximately one million word processing installations in the United States (Gottschall, 1981). That number is expected to double by 1983. Strassman (1981) forsees over 20 million electronic workstations in 1990.

Not all observers, of course, see such developments positively. Some, such as Sale (1980), fear the centralization that technology makes possible and wish for a return to a less complex world. Others, such as Schiller (1976), see communications technology as one of the ways rich nations control poorer ones:

> A largely one-directional flow of information from core to periphery represents the reality of power. So, too, does the promotion of a single language--English. A rapid, all encompassing communication technology (satellites and computers) is sought, discovered, and developed. Its utilization exhibits a close correspondence to the structure and the needs of the dominant elements in the core of the system. (p. 6)

No doubt the political implications of communications technology will be debated in the near future as such technology spreads and becomes more sophisticated.

Whether for good or bad, computers are going to have long-range

effects on the nature of writing. One effect may be the increased emphasis upon graphics in written communication. For about 70 years writing in the world of work has reflected the limitations of its chief generating device--the typewriter. Typewriters increased the number of documents that a clerical staff could produce and standardized the appearance of those documents. But typewriters are clumsy for most tasks other than full-line documents with justified left margins. Tables, for examples, are difficult to produce on typewriters, and more complex graphic representations, such as pie diagrams, are impossible. Until recently, computer systems for text processing have by and large shared these limitations. Line-oriented text editors are even less efficient than typewriters for composing tables and other routine spacing tasks (Gould, 1980). That situation, however, is also changing. The currently available Xerox Star system allows a user to format complex charts and other visual symbols with a few commands.

Technology likely will change what and how people write off the job as well, but we are far less confident in making predictions about what these changes might be. If computers become commonplace in the home and if these computers can communicate in a network (as Bell Telephone is now proposing), then electronic mail and other kinds of written communication can extend to the home. Even if we were sure of the directions of technology, we would still be hesitant in predicting people would write more often off the job. Certainly children today know computers best through video games and not through the computer's word

processing abilities. Secondary effects of technology are much more difficult to anticipate than immediate effects. It would have been easier to predict that Teflon could solve heat problems in spacecraft returning to earth than it would have been to predict that Teflon skillets would replace standard frying pans.

Finally, we make no specific preditions other than that written communication is not likely to go away anytime soon, and if past trends give any indication, there is likely to be a great deal more emphasis placed upon it. Technology is bringing about major changes in how we write and how we think about writing. We cannot anticipate exactly what those changes will be, but we can venture that persons who have acquired complex writing skills will most easily adapt to any new means of communicating in writing.

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